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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,800	02/03/2004	Young-Suk Chung	1594.1314	9248

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EXAMINER

GRAVINI, STEPHEN MICHAEL

ART UNIT	PAPER NUMBER
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3749

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/769,800	<b>Applicant(s)</b> CHUNG, YOUNG-SUK	
	<b>Examiner</b> Stephen Gravini	<b>Art Unit</b> 3749	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20040203</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanigawa et al. (US 5,887,456). Tanigawa is considered to disclose the claimed machine comprising:

a condensing duct **7** to guide the circulated air having passed through the rotating tub to be drawn to the drying heater **44**;

a cold water supply unit to supply cold water to an inside of the condensing duct (please see column 9 line 50);

a water temperature detecting unit **8** to detect temperatures of water condensed in the condensing duct through contact between the circulated air and the cold water; and

a controller **24** to determine whether an end of a drying process is reached based on the temperatures of the water detected by the water temperature detecting unit, and to terminate the drying process according to a result of the determination. Tanigawa is

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considered to also disclose the claimed spray nozzle **100**, cold water supply hose **106**, drying valve **95**, and counter to accumulatively count a drying time while the drying process is performed, wherein the controller is provided with the accumulatively counted time from the counter to determine whether the end of the drying process is reached (please see column 14 line 16).

Claims 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoffman et al. (US 5,806,204). Hoffman is considered to disclose the claimed machine comprising:

a water temperature detecting unit **38** to detect temperatures of water condensed through contact between the circulated air and cold water supplied from an external water source to dry the laundry;

a counter to accumulatively count a drying time while a drying process is performed; and

a controller to determine whether an end of the drying process is reached based on the temperatures of the water detected by the water temperature detecting unit and the drying time accumulatively counted by the counter, and to terminate the drying process according to a result of the determination (please see column 3 lines 20 through 40 wherein the disclosed present temperature and moisture parameters implies the claimed time controlled drying process because in both the disclosure and claims, it is considered that drying will stop after a preset parameter (i.e. temperature or moisture) is reached after a given determined time has been counted with respect to measure

parameters). Hoffman is also considered to disclose the claimed wherein the controller determines whether the end of the drying process is reached when the temperature of the water detected by the water temperature detecting unit decreases, wherein the controller determines whether the end of the drying process is reached by detecting the water temperatures at regular drying time intervals using the water temperature detecting unit, and comparing an accumulated temperature difference, which is calculated by accumulating temperature differences obtained in set sections, with a set value, and wherein the controller further determines whether the end of the drying process is reached by increasing a number of detections if the accumulated temperature difference satisfy the set value, and by comparing the increased number of detections with a set number of detections corresponding to the accumulatively counted drying time under the same reason discussed in rejection of the independent claim.

Claims 15, 31-34, and 37-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Clodic (US 6,161,306). Clodic is considered to disclose the claimed machine and method comprising:

- a heater **8**;
- a condensing duct **4** to guide the circulated air from the rotating tub to the heater;
- a water supplier **14** to supply water to the condensing duct such that water is condensed from the circulated air in the condensing duct by communication between the circulated air and the supplied water;

a temperature detector **28** or **29** to detect a temperature of the condensed water;  
and

a controller **31** to terminate a drying process according to changes in the  
temperature of the condensed water or alternatively

condensing water from the circulated air by communication between the  
circulated air and supplied water (please see column 4 lines 26-35);

detecting changes in temperature of the condensed water (please see column 4  
lines 42-51); and

terminating a drying process if an end of the drying process is determined to be  
reached based upon the detected changes in the temperature of the condensed water  
(please see column 4 line 44). Clodic is considered to also disclose the claimed end of  
the drying process is reached is determined responsive to counting an accumulatively  
counted drying time while the drying process is performed (column 3 lines 38-53  
wherein the disclosed level or temperature sensing implies the claimed time counted  
because level or temperature will change over sensed/counted time), detected water  
temperature decrease (column 3 line 38), detecting the water temperature at regular  
drying time intervals, accumulating temperature differences, which are accumulated  
over corresponding ones of the regular time intervals, and comparing the accumulated  
temperature difference with a set value (column 3 lines 38-43), controlling an opening of  
the drying valve, so that the water supplied is sprayed to an inside of the condensing  
duct by the spray nozzle (column 4 line 18), and calculating a difference between initial  
and final temperatures in each of the corresponding time intervals (again please see

column 3 lines 38-53 wherein the disclosed level or temperature sensing implies the claimed time counted because level or temperature will change over sensed/counted time).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanigawa in view of Clodic. Tanigawa is considered to disclose the claimed invention, as discussed above under the anticipatory rejection, except for the claimed submerged detector and its disposal location. Clodic is considered to disclose a submerged detector and its disposal location at column 3 lines 33-43. It would have been obvious to one skilled in the art to combine the teachings of Tanigawa with the considered

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disclosed temperature detector location for the purpose of monitoring saturation temperature.

Claims 10-14 and 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 4,250,628) in view of Turetta et al. (US 5,228,212).

Smith is considered to disclose a method and machine comprising:

detecting temperatures of water condensed through contact between the circulated air and cold water supplied from an external water source to dry the laundry at column 5 lines 1-9) or

a temperature detector **64** to detect a temperature of the condensed water.

Smith is considered to also disclose an air outlet **30** disposed in the lower portion of the condensing duct to pass the circulated air there through, wherein the temperature detector is disposed between the air outlet and a bottom of the condensing duct, a spray nozzle **26** disposed in the condensing duct, a water supply hose **100** connected to the spray nozzle, and a drying valve **101** disposed in the water supply hose to selectively supply the water supplied from an external water source, drying time counter (column 12 lines 32-36), a drying heater **88**, a discharge hose **40**, and wherein the drying valve operates so that an amount of water collecting in the condensing duct is greater than an amount of water discharged through the discharging conduit, so that the water temperature detector is submerged in the collected water (column 7 lines 43-46).

Smith is considered to disclose the claimed invention, except for the claimed terminating a drying process if an end of the drying process is determined to be reached based



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upon the detected water temperatures, a condensing duct to condense water from circulated air passing through the washing machine, and a controller to terminate a drying process according to changes in the temperature of the condensed water, a rotating tub, and a centrifugal fan mounted on the water tub and having an inlet and an outlet. Turetta is considered to disclose features including determining a drying process if an end of the drying process is determined to be reached based upon the detected water temperatures at column 4 lines 29-41, a condensing duct **15** to condense water from circulated air passing through the washing machine, a controller **27** to terminate a drying process according to changes in the temperature of the condensed water, a rotating tub **6**, and a centrifugal fan **7** mounted on the water tub and having an inlet and an outlet. It would have been obvious to one skilled in the art to combine the teachings of Smith with the claimed features considered to be found in Turetta for the purpose of providing a condensate controlled timing feature in laundering clothes such that a drying process is effectively terminated based on various drying variables, such as time, temperature or moisture values. Furthermore Smith in view of Turetta is considered to disclose the claimed invention, as discussed in the obviousness rejection above, except for the claimed condensate submerged temperature detector. Examiner takes Official notice that the temperature detector location of Smith in view of Turetta is an obvious variation of the detector location claimed because condensate is at a saturation temperature and the temperature detection of the exhausted steam, as disclosed by Smith in view of Turetta will be at saturation temperature since it is just prior to being discharged into the condensate. It would have been obvious to one skilled in the art to

claim a temperature detector location, since it is considered old and well known that a temperature of a saturated steam is the same as saturated condensate. Finally Smith in view of Turetta is considered to disclose the claimed invention, as discussed in the obviousness rejection above, except for detection set comparisons and curved condensing duct. It would have been an obvious matter or design choice to one skilled in the art to use a set comparison drying variable with a curved condensing duct because applicants have not distinguished the merits of those claimed features over what is already disclosed in the prior art.

Claims 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clodic. Clodic is considered to disclose a method, as discussed above under the anticipatory rejection, except for the claimed detection set comparisons. It would have been an obvious matter or design choice to one skilled in the art to use a set comparison drying variable because applicants have not distinguished the merits of those claimed features over what is already disclosed in the prior art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References N and O are considered to disclose condensate sensing temperature dryers.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Gravini whose telephone number is 703 308 7570. The examiner can normally be reached on normal weekday business hours (east coast time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira S. Lazarus can be reached on 703 308 1935. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

smg

July 29, 2004

